

LISTING OF THE CLAIMS:

Claims 1-30 (Cancelled).

31. (Previously Presented) Stamp device for printing a pattern on a surface of a substrate, said device having a two-sided rigid carrier layer providing on a first side thereof a patterned layer made of a first material and being combined on a second side opposite said first side with a soft layer made of a softer material than said first material, said patterned layer being stretched to selectively compensate for thermal, chemical, and mechanically induced deformation of said patterned layer to result in accurate prints; said carrier layer describes an x-y-plane in which said carrier layer is rigid and said carrier layer is flexible in a direction perpendicular to said x-y-plane; said patterned layer providing at least one force transducer zone arranged proximate the margin of said patterned layer for monitoring a force induced load acting between said stamp and said substrate.
32. (Currently Amended) Stamp device according to claim 31, wherein said force transducer zone provides a patterned structure in said patterned layer along the stamp margin surrounding at least an unencumbered area, and proximate said unencumbered area there are provided contoured structures forming in said patterned layer which bound the unencumbered area of said layer in at least one direction.

33. (Previously Presented) Stamp device according to claim 31, wherein said force transducer zone provides a patterned configuration surrounding at least an unencumbered area; and separating means which divide said unencumbered area into at least two unencumbered surface sections.

34. (Previously Presented) Stamp device according to claim 31, wherein said carrier layer is selected from a material consisting of a metal foil, thin glass or quartz substrate.

35. (Currently Amended) Stamp device according to claim 31 32, wherein said patterned layer possesses a thickness greater which is less than that of the depths of said structure depths, and said soft layer is of a thickness greater which is less than the thickness of said patterned layer.

36. (Currently Amended) Stamp device according to claim 35, wherein said patterned layer possesses a thickness greater than that of said structure depths in said patterned layer are less than the thickness of, and said soft layer is of a thickness greater than the thickness of said patterned layer.

37. (Previously Presented) Stamp device according to claim 31, wherein said soft layer includes a backside and said stamp device comprises a press for directing a force against said backside for contacting said patterned layer with said surface of said substrate.

38. (Previously Presented) Stamp device according to claim 37, wherein said press comprises a roller element forming a cylindrical press having an at least partially cylindrical surface.

Claims 39-47 (Cancelled).

48. (New) Stamp device for printing a pattern on a surface of substrate, said device having two-sided rigid carrier layer providing on a first side thereof a patterned layer made of a first material and being combined on a second side opposite said first side with a soft layer made of a softer material than said first material, said patterned layer being stretched to selectively compensate for thermal, chemical and mechanically induced deformation of said patterned layer to result in accurate prints; said carrier layer describes an x-y-plane in which said carrier layer is rigid and said carrier layer is flexible in a direction perpendicular to said x-y-plane, wherein said patterned layer includes patterned structures for contacting said surface of said substrate and the first material of said patterned layer is at least partially omitted so as to form at least one recess and wherein at least one passage channel breaks through said carrier layer into said at least one recess for creating a fluidic or gas network between said surface of said substrate and said stamp device.

49. (New) Stamp device according to claim 48, wherein there are provided at least two said passage channels comprising an inflow channel and an outflow channel for said fluidic or gas network.

50. (New) Stamp device according to claim 48, wherein at least two layers of said fluidic or gas network are stacked on top of each other having communicating holes and channels in said recess zones in said layers to allow formations of multidimensional networks providing access to a multitude of substances at a multitude of locations without level intersections.

51. (New) Stamp device according to claim 48 or 52,
wherein said unencumbered areas are connected to a closed further fluidic network and are pressurized through said at least one passage channel to prevent said areas from sagging and contacting said substrate upon the applying of a load onto said stamp device.

52. (New) Stamp device for printing a pattern on a surface of a substrate, said device having a two-sided rigid carrier layer providing on a first side thereof a patterned layer made of a first material and being combined on a second side opposite said first side with a soft layer made of a softer material than said first material, said patterned layer being stretched to selectively compensate for thermal, chemical and mechanically induced deformation of said patterned layer to result in accurate prints;
said carrier layer describes an x-y-plane in which said carrier layer is rigid and said carrier layer is flexible in a direction perpendicular to said x-y-plane, wherein said stamp device forms said patterned layer and the surface of said substrate comprise self-aligning means providing for an accurate relative positioning during printing of said pattern.

53. (New) Stamp device according to claim 52, wherein said self-aligning means comprises lock and key elements with lock elements of a constant shape and distance, and said key elements are of variable shape dimensionally smaller than said lock elements and increasingly larger for fitting without any mismatch into said lock elements.
54. (New) Stamp device according to claim 53, wherein said lock and key elements have tapered flanks.
55. (New) Stamp device according to claim 53, wherein said lock and key elements are arranged in a row along which said patterned layer and said substrate are brought into contact.
56. (New) Stamp device according to claim 53,
wherein said patterned layer comprises said key elements and said surface of said substrate comprises said lock elements.
57. (New) Stamp device for printing a pattern on a surface of a substrate, said device having a two-sided rigid carrier layer providing on a first side thereof a patterned layer made of a first material and being combined on a second side opposite said first side with a soft layer made of a softer material than said first material, said patterned layer being stretched to selectively compensate for thermal, chemical and mechanically induced deformation of said patterned layer to result in accurate prints;

said carrier layer describes an x-y-plane in which said carrier layer is rigid and said carrier layer is flexible in a direction perpendicular to said x-y-plane.

58. (New) Stamp device according to claim 57,

wherein said patterned layer provides at least one force transducer zone arranged proximate the margin of said patterned layer for monitoring a force induced load acting between said stamp and said substrate.

59. (New) Stamp device according to claim 58, wherein said force transducer zone provides a patterned structure surrounding at least an area free of structures and proximate said area free of structures there are provided structures which bounds the area free of structures in at least one direction.

60. (New) Stamp device according to claim 58, wherein said force transducer zone provides a patterned structure surrounding at least an area free of structures; and linear structures are provided which divide said area free of structures in at least two sections.

61. (New) Stamp device according to claim 60, wherein at least two linear structures being arranged perpendicular to each other and dividing said area free of structures at least into three sections.

62. (New) Stamp device according to claim 58, wherein said force transducer zone is placed in an area near an edge of said patterned layer.

63. (New) Stamp device according to claim 57, wherein said patterned layer provides patterned structures for printing said surface of said substrate, said patterned structures being separated from each other by areas free of structures; and support structures in the form of posts or lines, are provided for preventing said areas free of structures from sagging and contacting said substrate by applying a load onto said stamp device.

64. (New) Stamp device according to claim 63, wherein said support structures having maximally the same structure depth as said patterned structures and being of the same material or of harder material like PMMA.

65. (New) Stamp device according to claim 57, wherein said patterned layer provides patterned structures for printing said surface of said substrate and said patterned structures being separated from each other by areas free of structures and in said areas free of structures the first material of said patterned layer is at least partially omitted forming a recess for preventing said areas free of structures from sagging and contacting said substrate by applying a load onto said stamp device.

66. (New) Stamp device according to claim 57,
wherein said patterned layer provides patterned structures for contacting said surface of said substrate and said patterned structures being separated from each other by areas free of structures and n said areas of structures the first material of said patterned layer is at least partially omitted forming a recess, and

wherein at least one passage channel breaks through said carrier layer into said recess for creating a fluidic or gas network between said surface of said substrate and said stamp.

67. (New) Stamp device according to claim 68,

wherein at least two passage channels are provided, one inflow channel and an other outflow channel for a fluid or gaseous media.

68. (New) Stamp device according to claim 68, wherein at least two layers of said fluidic or gas network are stacked on top of each other to allow formation of multidimensional networks providing access to a multitude of substances at a multitude of locations without level intersections.

69. (New) Stamp device according to claim 57, wherein said patterned layer as well the surface of said substrate comprises self-aligning means providing for an accurate relative positioning during the printing process.

70. (New) Stamp device according to claim 69, wherein said self-aligning means comprises lock and key elements with lock elements of a constant shape and distance and said key elements being of variable shape smaller than said lock elements and increasingly larger for fitting without any mismatch into said lock elements.

71. (New) Stamp device according to claim 70, wherein said lock and key elements have tapered flanks.

72. (New) Stamp device according to claim 70, wherein said lock and key elements are arranged in a row along which said patterned layer and said substrate are brought into contact.
73. (New) Stamp device according to claim 70,
wherein said patterned layer comprises said key elements and said surface of said substrate comprises said lock elements.
74. (New) Stamp device according to claim 57, wherein said patterned layer is stretched to compensate thermal, chemical, and/or mechanical induced deformation of said patterned layer to result in accurate prints.
75. (New) Stamp device according to claim 74, wherein said first material of said patterned layer has a thermal expansion coefficient which is greater than the thermal expansion coefficient of said rigid carrier layer.
76. (New) Stamp device according to claim 67,
wherein said areas free of structure and connected to a closed gaseous network are pressurized through at least one passage channel to prevent those areas from sagging and contacting said substrate by applying a load onto said stamp device.